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PATENT COOPERATION TREATY

PCT/EP2003/014951



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PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference KA 1674-02WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/014951	International filing date (day/month/year) 29 December 2003 (29.12.2003)	Priority date (day/month/year) 04 January 2003 (04.01.2003)
International Patent Classification (IPC) or national classification and IPC G01N 1/06		
Applicant ROWIAK GMBH		

<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>6</u> sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of _____ sheets.</p>	
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>	

Date of submission of the demand 04 June 2004 (04.06.2004)	Date of completion of this report 09 March 2005 (09.03.2005)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

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I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
 pages _____ 1-24 _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☒ the claims:
 pages _____ 1-23 _____, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☒ the drawings:
 pages _____ 1/2-2/2 _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-23	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-23	NO
Industrial applicability (IA)	Claims	1-23	YES
	Claims		NO

2. Citations and explanations

This report refers to the following documents:

- D1: WO02/057746 A (GANSER MICHAEL; WEISS ALBRECHT (DE); LEICA MICROSYST GMBH (DE)) 25 July 2002 (2002-07-25)
- D2: DE 100 20 559 A (HANNOVER LASER ZENTRUM) 31 October 2001 (2001-10-31)
- D3: LUBATSCHOWSKI H ET AL.: "APPLICATION OF ULTRASHORT LASER PULSES FOR INTRASTROMAL REFRACTIVE SURGERY" GRAEFE'S ARCHIVE FOR CLINICAL AND EXPERIMENTAL OPHTHALMOLOGY, Springer Press, XX, Vol. 238, January 2000 (2000-01), pages 33-39, XP001014554 ISSN: 0721-832X
- D4: US 2002/164678 A1 (GANSER MICHAEL ET AL.) 7 November 2002 (2002-11-07).

1) The present application does not meet the requirements of PCT Article 33(1) because the subject matter of claims 1-23 does not involve an inventive step within the meaning of PCT Article 33(3).

Document D1 is considered to be the prior art closest to the subject matter of claim 1. It discloses (the references in parentheses relate to this document):

A microtome comprising: a mount apparatus with a plate (D1, feature 1) to hold at least one section of an object to be processed (D1, page 9, line 6 and figure 7) and a separating device that comprises at least one laser radiation source (D1, page 9, line 14) and means of focussing the laser radiation (D1, page 9, lines 15-18), the beam focus produced by the focussing being movable relative to the support and directable to one point in the separation surface of the object to be processed in order to effect a material separation at this point (D1, page 9, lines 23-30).

The subject matter of claim 1 differs, then, from that known from D1 in that means are provided for pulsed application of the beam focus to the point in the separation surface, said means being set up to generate pulses with an application time of <1 picosecond.

The technical problem to be solved with the present invention can be seen as that of permitting a high-precision cutting operation.

Document D2 describes the same advantages as the present application with respect to the feature of the pulsed laser (D2, paragraphs 1, 2, 15 and 25) (D3 also describes the problem of destroying the biological material, and the solution proposed there is the use of a pulsed laser (in this case a femtosecond laser), see for example D3, fig. 1, 2 and 3). A person skilled in the art would therefore regard the inclusion of this feature as an ordinary measure for solving the problem of interest.

1.2) Dependent claims 2-13 do not contain any features which in combination with the features of any claim to which they refer back meet the PCT requirements for

inventive step. The pertinent features are disclosed in documents D1, D2 and/or D4 as follows:

means of focussing the laser radiation that are set up to move the beam focus in at least one spatial direction relative to the plate (D1, page 9, lines 15-18 and 23-30),
means of directing the laser radiation (D1, page 9, lines 23-30),

means of focussing the laser radiation that have a numerical aperture >0.65 (D4, page 1, column 2, paragraph 16),

means of pulsed application of the laser radiation that are set up to interrupt the beam pulsingly (D2, paragraph 25),

means of pulsed application of the laser radiation that are set up to cooperate with the radiation source (D2, paragraph 25 and figure 1),

control means that control the time sequence of the radiation pauses and control the relative movement between the beam focus and the plate as a function of the time sequence of the radiation pauses (D2, paragraph 25 and figure 1),

means of controlling the relative movement between the plate and the beam focus along a curved separation surface (D1, page 9, lines 30-32),

means of viewing the object to be processed (D1, feature 51, figure 1),

means of viewing that comprise an optical microscope (D1, feature 25, figure 1),

means of viewing that display at least one section of the object to be processed using backscattered laser radiation (D2, paragraph 37),

the display means, comprising:

a detector for capturing the radiation backscattered from the section of the object to be processed (D2, paragraph

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37),

means of producing a pictorial representation of the section of the object to be processed by superimposing the laser radiation backscattered from the section of the object to be processed and the coherent radiation reflected from the reference plane (D2, paragraph 37).

1.3) The present application does not meet the requirements of PCT Article 33(3) because the subject matter of claims 14-23 does not involve an inventive step. Claims 14-23 are method claims related to device claims 1-13, and so the same objections apply mutatis mutandis to claims 14-23.